Stormwater system

Location: infrastructure/stormwater_panama_city

Description

This layer consists of storm water structures within the city of Panama City limits. Stormwater features such as drainage inlets, manholes, junction boxes, end-treatments (walls), drainage pipes and culverts, ditches, and retention/detention ponds are all included in the system. Information such as pipe sizes, shape, material, inverts and inlet rim elevations are all incorporated in data attribution where available. Project will be kept as a **work-in-progress** for the spatial and attribute information updates.

Source

The city of Panama City Public Works Department together with Bay County/Panama City GIS started the project in October 2001. GPS data collection was chosen as the primary data collection in mapping and the As-builts used as confirmation sheets, source of inverts and other profile information along with the knowledge from the experienced staff. Two different GPS equipments were used in the project duration with different accuracy levels. Features collected with the Trimble unit cover approximately 65% of the city and those have an accuracy level falling within 3ft of their actual locations. The rest of the 35% have a lower accuracy level of within 4-5ft. The initial field data collection concentrated on structure positions, their physical characteristics and conditions noted like number of pipes, their sizes, material and direction of flow. Corrections and updates continue to be done whenever available.

Attribute Table Structure

Drainpipes (Line features) fields:

Item Name	Length	Data Type	Decimals	
FACILITY_ID	20	C	-	
PWTYPE	8	C	-	
SUB_TYPE	4	C	-	
LEGACY_ID	20	C	-	
BASIN	8	C	-	
SUB_BASIN	8	C	-	
LOCATION	100	C	-	
WARRANTYDATE	DATE			
CONDITION	10	C		
CONDITIONDATE	DATE			
SITE	20	C		
INSTALLDATE	DATE	D	-	
OWNER	8	C	-	
CONTRACTOR	10	C	-	
INSTALLATION_TAG		Long Integer		
ASBUILT_DATE		Long Integer		-
INLET_DEFCTS	100	C	-	
COMMENTS	255	C	-	
INLET_HEIGHT		float		
INLET_LENGTH		float		
INLET_WIDTH		float		
ELEV_INVERT		float		
ELEV_RIM		float		
BENCHMARK	50	C	-	
MATERIAL	8	C	-	
GRATE_TYPE	8	C	-	
GUTTERS	4	C	-	
STATUS	5	C	-	

Inlets (Point features) fields:

Item Name	Length	Data Type	Decimals	
FACILITY_ID	20	C	-	
PWTYPE	8	C	-	
SUB_TYPE	4	C	-	
LEGACY_ID	20	C	-	
BASIN	8	C	-	
SUB_BASIN	8	C	-	
LOCATION	100	C	-	
WARRANTYDATE	DATE			
CONDITION	10	C		
CONDITIONDATE	DATE			
SITE	20	C		
INSTALLDATE	DATE	D	-	
OWNER	8	C	-	
CONTRACTOR	10	C	-	
INSTALLATION_TAG		Long Integer		
ASBUILT_DATE		Long Integer		-
INLET_DEFCTS	100	C	-	

COMMENTS	255	C	-
INLET_HEIGHT		float	
INLET_LENGTH		float	
INLET_WIDTH		float	
ELEV_INVERT		float	
ELEV_RIM		float	
BENCHMARK	50	C	-
MATERIAL	8	C	-
GRATE_TYPE	8	C	-
GUTTERS	4	C	-
STATUS	5	C	-

PONDS (Polygon features) fields:

Item Name	**Length**	**DataType**	**Decimals**
FACILITYID	20	C	-
PWTYPE	8	C	-
COMMENTS	255	C	-
LOCATION	100	C	-
WARRANTYDATE	DATE		
LEGACYID	20	C	
CONDITION	10	C	
CONDITIONDATE	DATE		
INSTALL_DATE	DATE		
OWNER	8	C	-
DIMENSION	20	C	-
ELEV_BOT		float	
ELEV_DISCH		float	
DEPTH		float	
VOLUME	20	C	-
SLOPE	8	C	-
BASN_SIZE	20	20 C	-

Attribute Description

Arc_field definitions

FACILITY_ID
A user-defined feature identification used in the custom utility software Cityworks.

PWTYPE
This is a Cityworks code that specifies the system feature type, e.g
DPIPE= Drainage Pipe
DCHANNEL= Drainage Channel (Ditch)
DCULVERT= Drainage Culvert

RECORDED LENGTH
Field measured length of the feature (measurement **in linear feet**)

SUB_TYPE
Feature subtype e.g BRG = Bridge
BY=Bayou
CNL=Canal
CRK=Creek
OD=Open Ditch
SL=Swale
SWY=Spillway
VLT=Vault

BASIN
The major storm water drainage basin in which the structure is located. eg
PC=Panama City

SUB-BASIN
Local basins that accommodate the different drainage flow routes within Panama City basin.eg,
ANDREW=St.Andrew Bay
CAROLINE=Lake Caroline
GOOSE=Goose Bayou
HUNTINGTON=Lake Huntington
JOHNSON=Johnson Bayou
MASSALINA=Massalina Bayou
POSTEN=Posten Bayou
PRETTY=Pretty Bayou
ROBINSON=Robinson Bayou

VAN-VAC=Lake Van-Vac
WATSON=Watson Bayou
WARE=Lake Ware

WARRANTYDATE
Date the feature's warranty ends.

LEGACYID
This is a unique historical Identification carried over from the previous databases. It can be used for referencing prior data.

CONDITION
Field for recording the condition of the feature ie : Good
Fair
Poor

CONDITIONDATE
The date the condition of the feature was determined

INVENTORYDATE (GPS_DATE)
The date the feature was GPSed or inventory taken.

INSTALLDATE
Date the feature was installed

OWNER (ADMINISTRATIVE AREA)
Field stores the name of the municipality or owner of the feature, and in most cases for structure maintanance and upkeep. Ie BC = Bay County
PC =Panama City
FDOT = FL transportation dept
SPR = Springfield
LYN = Lynn Haven
CAL = Callaway
PAR = Parker
PCB = Panama City Beach
-
MQC=Mosquito Control
PRV=Private

LOCATION
Address location of the feature.

CONTRACTOR
The construction company that the did the structure installation; or consulting company responsible for the plan designs

ANNOTATION
Critical pipe info that needs to be known or accessed with other fields

PIPE_DEFCTS
Detailed condition of the pipe if noted as fair or poor in the "CONDITION" field

PIPE_NOTES
Any other information about the pipe

RECORDED_LENGTH
This is the total measured length of the feature as recorded on the Asbuilts or as measured from the field.

DIAMETER
The inside diameter of the **circular** pipe (**in inches**)

MATERIAL
The material of the pipe, eg.
ADS=Perforated High Density Polyethylene
CIP = Cast Iron Pipe
CON = Concrete
DIP = Duct Iron Pipe
CMP = Corrugated Metal Pipe
HDPE=High Density Polyethrene
PVC = Polyvinyl Chloride
RCP=Reinforced Conc.Pipe
VCP=Vetrified Clay Pipe
UK = UnKnown
UNK = Unknown/Not Specified

HEIGHT
The height of a **non-circular** main pipe (usually with box culverts, arched or elliptical pipes)

WIDTH
The width of a **non-circular** main pipe (usually with box culverts, arched or elliptical pipes)

PIPE_SHAPE
The shape of the pipe ie CIR=Circular
REC=Rectangular
BOX= Box
ARCH=Arched
ELP=Ellipticle

INSTALLATION_TAG
This is a field to keep installation dates for analysis purposes

ASBUILT_DATE
The date that appears on the Asbuilts for the feature installed.

PARALLEL
Is the pipe parallel to other nearby pipes e.g., Y = Yes
N = No

SURFACE_TYPE
The type of ground covering around the feature (i.e Asphalt, concrete, grass or dirt, shrubs, etc)

UPS_ELEV
The Upstream Invert of the end of the pipe.

DWN_ELEV
The Downstream Invert of the end of the pipe .

SLOPE
A numeric value indicating the slope or inclination of the trench, as a ratio of the vertical distance to the horizontal distance (or “rise” over “run”).

BENCHMARK
Brief description of the benchmark used in the project.

UPS_DEPTH
The upstream depth of the pipe from the surface.

DWN_DEPTH
The downstream depth of the pipe from the surface.

HI_LOW_PT_ELEV
The highest or lowest point (in elevation) of the pipe

MIN_FLOW
The minimum flow for which the feature was designed.

MAX_FLOW
The absolute maximum flow through the pipe feature

AVG_FLOW
The estimated average flow through the feature.

DESIGN_FLOW
The maximum flow the feature was designed to handle.

STATUS
The present state of the feature e.g., ACT = Active
ABN = Abandoned or NA = Not Active
PRP = Proposed
UNC = Under construction

Point field definitions

FACILITY_ID
This is a user defined -ID given to a feature and used in Cityworks

PWTYPE
This is a Cityworks code that specifies the system feature type, e.g
DJNCHAMB=Junction Chamber(Box)
DDETBASN=Detention Basin
DINLET=Inlet

DMANHOLE=Drain Manholes
DNODE=Feature not specified
DOUTFALL=Outfall
DPIPEFIT=Pipe Fitting
DRETBASN=Retention Basin
DVALVE=Valve
DWALL=Walls (HW,WW,ME,NW, C, CC)

SUB_TYPE
Point feature sub-type, e.g
FOR INLETS: CMB=Combination Inlet
CRB=Curb opening Inlet
DRP=Drop Inlet or BOX = Box inlet
GRT=Grate
MH=Manhole
SLT= Slot Inlet
SB = Skimmer box
FOR WALLS: HW=Head Wall
WW=Wing Wall
ME=Miter End
NW=No Wall
C =Curved Wall
CC = Concave Wall

Fields from **LEGACY_ID** to **STRUC_NOTE** are smilar in description to the arc(pipe) fields; refer to above

INLET_HEIGHT (depth)
The height (in feet) from the ground surface to the bottom of the inlet

INLET_WIDTH
The width/diameter (in feet) across the bottom of the inlet

ENTRAP_DEPTH
The depth (in feet) from the end of pipe to the bottom of the inlet

ELEV_INVERT
The elevation at the bottom of the inlet

ELEV_RIM
The Top elevation (in feet) of the of the inlet

BENCHMARK
The benchmark used in setting up the above elevations

BASIN_MATERIAL
The construction material used in the inside of the inlet i.e CONC = Concrete
BRK = Brick
WOOD = Wood panels
CEM = Cement bags
SB = Sand bags
CONB = Concrete blocks or BLK= blocks
MET = Metal
RR = Rip rap (concrete rubble)
AF = Armour form
DT = Dirt

GRATE_TYPE
The type of grate used based on the sub_type field (i.e usually classified as A,C, D, E, A-2 …etc., based on asbuilt information)

GUTTERS
This denotes if inlet is fed by gutters or not i.e Y =Yes
N = No

STATUS
The present state of the feature e.g., ACT = Active
ABN = Abandoned or NA = Not Active
PRP = Proposed
UNC = Under construction

<u>Polygon field definitions</u>

PWTYPE
This is a Cityworks code that specifies the system feature type i.e DRETBASN = Retention Basin
BAYOU = Bayou
LAKE = Lake
SAND-TRAP= Sand Trap

Fields from **STRUC_NOTE** to **OWNER** are smilar in description to the arc (pipe) fields; refer to above

DIMENSION
The length and width (in feet) of the pond or diameter if its round

BOT_ELEV
The elevation of the bottom of the pond

DISCH_ELEV
The elevation of the discharge pipe

DEPTH
The depth (in feet) of the retention basin

VOLUME
An estimated capacity the basin can hold (source is asbuilt)

SLOPE
This is the degree of angle of the sides of the pond

SOIL_TYPE
The soil classification or type where the retention pond is installed

BASN_SIZE
The size of the retention basin